

# ON THE SARCOPTID OR MANGE-MITES OF THE WOMBAT

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A SARCOPTID mite infesting the skin of the Australian Wombat has been known since 1893, when Railliet (*Traité Zool. méd. et agric.*, 2nd ed.) recorded without description or figures, a mite which had been found by Dumeril on the skin of a wombat from Australia in the *Museum nationale d'Histoire naturelle de Paris*. Apparently on the opinion of Fournier, the mite was considered to be identical with that of man, *Sarcoptes scabiei* (Linn. 1758) and was given the variety name of *wombati*. It was said to be able to affect man (the keepers in charge of the wombat while in captivity) and to cause larger vesicles than the human scabies.

Apart from the above information which has been repeated by many writers, viz., Canestrini and Kramer in "*Das Tierreich*, Lfg. 7, 1899"; Warburton in "*Parasitology*, 12, 289, 1920"; Lemaire in "*Traité d'Entomologie Méd. et Vet.*, 1938"; and Rainbow in "*Rec. Aust. Museum*, 6, 190, 1906 (who also gives the species of wombat as *Phascalomys ursinus* Shaw (= *Vombatus ursinus ursinus* Shaw in Iredale and Troughton, which if correct would indicate that the specimen was from Tasmania), no records, descriptions or figures of fresh material have been found in the literature.

In 1937, however, specimens were collected from wombats and were identified by Dr. R. N. McCulloch as *Sarcoptes scabiei* (L.). A slide of this material was sent to Mr. S. L. Allman, of the Department of Agriculture, New South Wales.

Fortunately Mr. Allman has been able to find this slide, which contained seven females and three males, and I am greatly indebted to both Dr. McCulloch and Mr. Allman for the opportunity of examining this material.

The specimens have been remounted on individual slides, and I am now able to give certain details of the morphology, figure both sexes, and fully confirm the identification.

I am also indebted to Mr. David Lee for the opportunity of examining four other slides of Dr. McCulloch's material left at the School of Public Health and Tropical Hygiene, Sydney. These slides contained numerous specimens of both sexes and young stages.

## FAMILY SARCOPTIDAE.

## Genus SARCOPTES.

*SARCOPTES SCABEI* v. *WOMBATI* Railliet 1893.

*Sarcoptes scabei* v. *wombati* Railliet 1893, *Traité de Zool. med. et agric.*, 2nd ed. (nom.nud.).

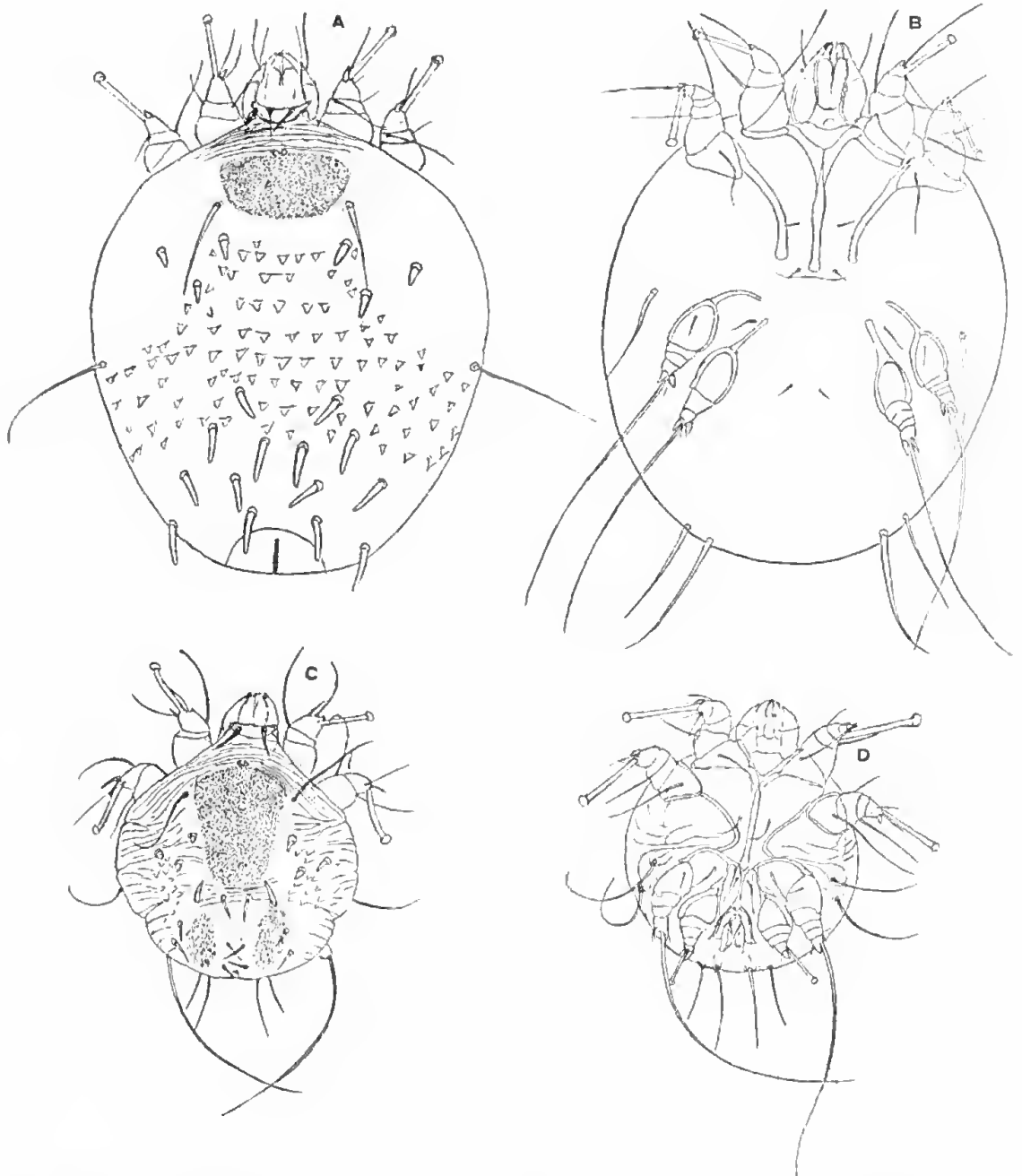


Fig. 1. *Sarcoptes scabei* v. *wombati* Railliet 1893. A-B, Female: A dorsal, B ventral; C-D, Male: C dorsal, D ventral.

*Description:* As in *S. scabei* and its various physiological races, from different host species. *Female.* Length of idiosoma of mounted specimens  $320\mu$ , width  $299\mu$ . Length of dorsal cones  $16\mu$ , of dorsal spines  $34\mu$ . *Male.* Length of idiosoma  $162\mu$ , width  $169\mu$ , dorsal cones  $8\mu$ , dorsal spines  $17\mu$ .

*Loc. and Host.* From wombats, species ?, from Goulburn, New South Wales, June, 1937 (coll. the District Veterinary Officer).

Recently I have received through Mr. T. G. Campbell, of the Division of Entomology, C.S.I.R.O., Canberra, some sarcoptid material taken from a specimen of *Vombatus hirsutus hirsutus* Perry 1810 (= *mitchelli* auct.) which was killed on the Bundabella Road, Australian Capital Territory, on the 13th July, 1951.

This new material, while being closely related to the Sarcoptidae, differs in so many respects that a new family is required for it.

#### FAMILY ACAROPTIDAE nov.

With a pair of vertical setae. Cuticle striated. Caruncle stalked on short legs. Without dorsal cones, spines or scales. Female with only propodosomal shield; male with both propodosomal and hysterosomal shields. Male with anal suckers.

*Remarks.* Closely allied to the Sarcoptidae, differing in the above characters. In the structure of the third and fourth legs and the anal suckers in the male, however, it shows some resemblance to *Megninia* of the *Analgesidae*, a family confined to birds, and in which vertical setae are wanting.

#### GENUS ACAROPTES nov.

Female with legs I and II normal, tarsi furnished with a single claw and a shortly pedunculate sucker; legs III and IV short, without claws or suckers but ending in a pair of very long setae; epimera of leg I united apically; genitalia between legs II and III. Male with all legs of normal length except III, which is half the length of IV; I and II furnished with tarsal pedunculate sucker and paired bifurcate claws; leg III with tarsus ending in a short stout claw; leg IV ending in two long setae and two lanceolate spines; anal suckers present.

Dorsum striate, with propodosomal and hysterosomal shields in the male, propodosomal only in female; without dorsal spines; apically in the male the abdomen is divided into six short lobes, each with a long seta, the middle pair of which are slightly expanded basally.

Genotype *Acaroptes vombatus* sp. n.

## ACAROPTES VOMBATUS sp. n.

*Description. Female.* Shape oval, but anterior of shoulder the sides are concavely converging to the rounded apex. Length of idiosoma  $380\mu$ , width  $300\mu$ . Dorsum striated with a single anterior small dorsal shield as figured; furnished with a pair of vertical setae  $16\mu$  long, three median pairs of setae of moderate length ea.  $50\mu$ , on each side of the first of these pairs is a very long seta of almost body length, and laterally of these another of moderate length;

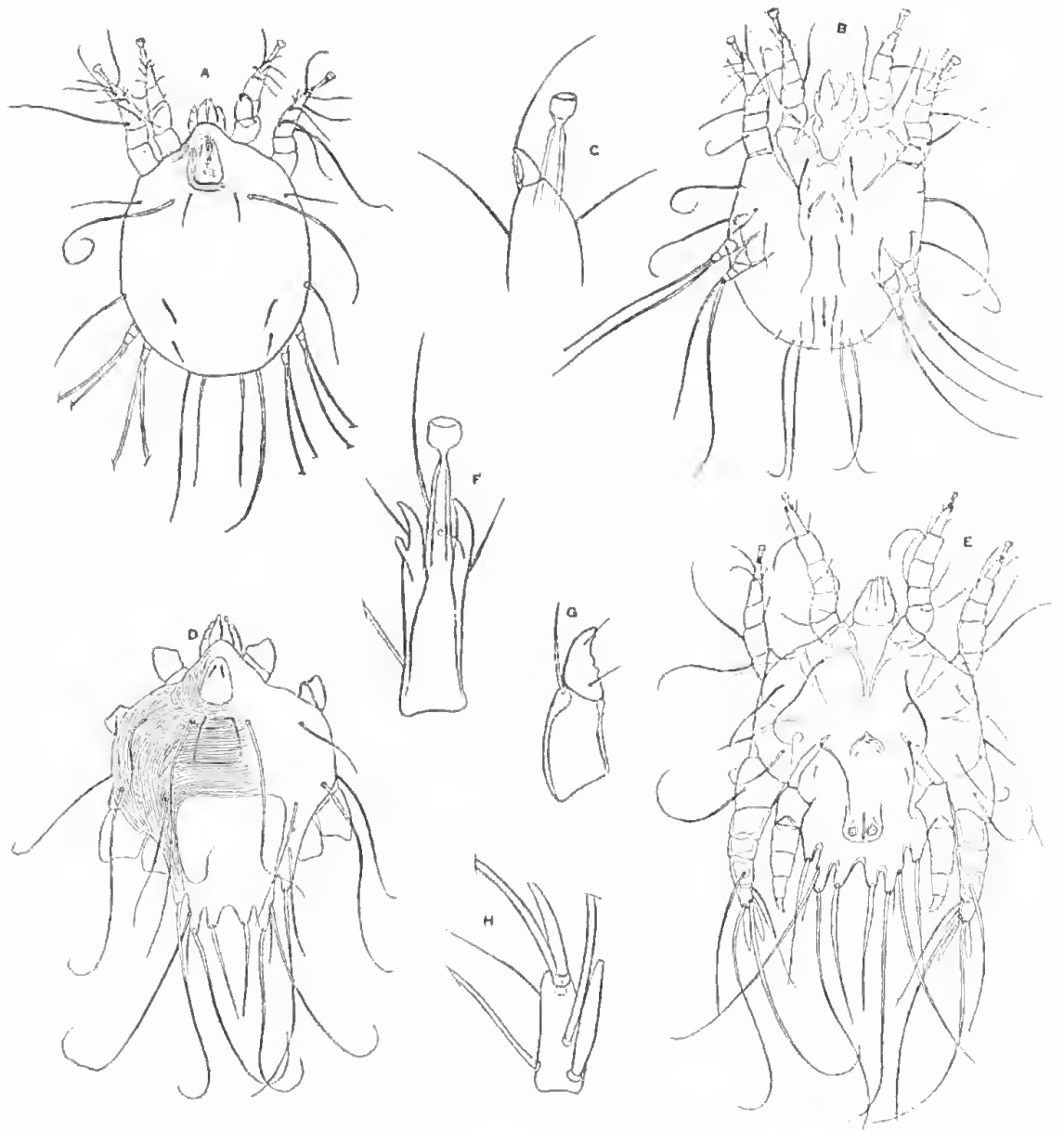


Fig. 2. *Acaroptes vombatus* g. et sp. n. A-C, Female: A dorsal, B ventral, C tip of tarsus I or II; D-H, male: D dorsal, E ventral, F tarsus I or II, G tarsus III, H tarsus IV with long setae cut off.

laterally on level of coxae III another of moderate length. Ventrally: epimera of leg I united medially; a seta on coxae I, II, III; genitalia between coxae II and III, flanked by three fine setae, the third of which is fairly long and sinuous; anus also flanked by three setae, the anterior of which is fairly long and sinuous; legs I and II of normal length, tarsi furnished with a short stout claw, and a fairly long caruncle and sucker; legs III and IV short, tarsi without claws or caruncles and sucker, but ending in a pair of very long setae.

*Male.* Shape as figured. Larger than female. Length  $780\mu$ , width  $650\mu$ . Dorsum with striate cuticle, and two dorsal shields, an anterior as in female and a larger posterior shield; body posteriorly with six lobes, the medial pair with a moderately long basally slightly expanded seta, the next and longest lobe with two very long and one short seta, and the short outer lobes with a long seta; other dorsal setae much as in female. Ventrally: epimera of leg I free as figured. Legs all of normal length, except III which is only half as long as IV; tarsi I and II with shorter caruncle than in female and ending in a pair of bifid claws (see figure), III ending in a single strong stout claw with a few inner small teeth; IV with tarsus ending in two very long setae and a pair of strong lanceolate setae. Anus flanked on each side by an anal sucker.

Chelicerae in both sexes small, with two blunt teeth. Palpi apparently three segmented.

*Remarks:* Described from 11 males and 18 females in the collection of the South Australian Museum.